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54. The ATM switch according to claim 53, wherein the particular input port is associated with a selected store whose backlog caused the selective filtering condition to be imposed.

REMARKS

Claims 1-5, 7-16 and 18-54 are pending in the present application, of which claims 1, 10, 23, 33 and 42 are independent. Claims 1, 10, 23, 33, 38-39, 42 and 49-50 have been amended. Applicants respectfully request that the amendment be entered and further request reconsideration and allowance of claims 1-5, 7-16, 18-54.

The Examiner has objected to claims 1, 10, 23, 33 and 42 as allegedly having informalities. Applicants have amended claims 1, 10, 23, 33 and 42 as required by the Examiner. Therefore, applicants respectfully request that the objection of claims 1, 10, 23, 33 and 42 be withdrawn.

Further, the Examiner has rejected claims 33-54 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants have amended claims 33, 38-39, 42 and 49-50 in response to the Examiner's rejection. Therefore, applicants respectfully request that the rejection of claims 33-54 under 35 U.S.C. § 112, second paragraph, be withdrawn.

The Examiner has previously indicated that claims 23-32 contain allowable subject matter. Further, claims 23-32 are not rejected in the present action, and the objection to claim 23 was addressed above, thereby responding to objection to all of claims 23-32. Therefore, applicants respectfully request that claims 23-32 be allowed.

The Examiner has rejected claims 1-3, 5, 7-14, 16, 18-20, 22, 33-35, 37-46, 48-52 and 54 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 5,774,453 ("Fukano et al."). In addition, the Examiner has rejected claims 4, 15, 21, 36, 47 and 53

under 35 U.S.C. 103(a) as allegedly being unpatentable over Fukano et al. in view of U.S. Patent No. 5,497,375 ("Hluchyj et al.").

Fukano et al. allegedly discloses an input/output buffer type ATM switch capable of traffic control depending on the traffic type at the time of cell congestion. Fukano et al. discloses, however, that "[e]ach of the input buffers 11₁ to 11_n stops an outputting of cells for the output port corresponding to the output buffer indicated in the fifth RNR signal being received. In this case, outputting cell from both of two logical queues of CBR for high priority and of ABR for low priority is stopped." (Fukano et al., Col. 7, lines 38-43). As such, Fukano et al. does not appear to disclose a rate filter capable of filtering at least one data unit, wherein additional data units in violation of the rate limitation are filtered by the rate filter so that they are not stored in the output data stores. Instead, Fukano et al. merely discloses that "outputting cell from both of two logical queues of CBR for high priority and of ABR for low priority is stopped."

Each of claims 1 and 10 recites, in a relevant portion, "[a]n ATM switch, comprising . . . a rate filter capable of filtering at least one data unit . . . wherein the additional data units in violation of the rate limitation are filtered by said rate filter so that they are not stored in the output data stores." Fukano et al. does not disclose this. Therefore, applicants respectfully request that the rejection of claim 1 and 10 be withdrawn and that claims 1 and 10 be allowed.

Since claims 2-5 and 7-9 depend from claim 1, they incorporate all the terms and limitations of claim 1 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection of claims 2-5 and 7-9 be withdrawn and that they be allowed.

Since claims 11-16 and 18-22 depend, directly or indirectly, from claim 10, they incorporate all the terms and limitations of claim 10 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection of claims 11-16 and 18-22 be withdrawn and that they be allowed.

Each of claims 33 and 42 recites, in a relevant portion, "[a]n ATM switch, comprising . . . a rate filter capable of filtering at least one data unit . . . wherein the additional data units in violation of the rate limitation are filtered by said rate filter so that they are not stored in the data stores." Fukano et al. does not disclose this. Therefore, applicants respectfully request that the rejection of claims 33 and 42 be withdrawn and that they be allowed.

Since claims 34-41 depend from claim 33, they incorporate all the terms and limitations of claim 33 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection of claims 34-41 be withdrawn and that they be allowed.

Since claims 43-54 depend, directly or indirectly, from claim 42, they incorporate all the terms and limitations of claim 42 in addition to other limitations, which together patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection of claims 43-54 be withdrawn and that they be allowed.

In view of the foregoing amendments and remarks, applicants respectfully request the allowance of claims 1-5, 7-16 and 18-54, and an early issuance of a patent. If there are any remaining issues that can be addressed over the telephone, the Examiner is invited to call applicants' attorney at the number listed below.

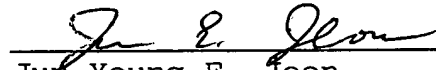
Application No. 09/006,777

Attached hereto is a marked-up version of the changes made to the above-identified application by the current amendment. The attached page is captioned "Version with markings to show changes made."

Respectfully submitted,

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By



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626/795-9900

JEJ/sd

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

1. (Four Times Amended) An ATM switch, comprising:
a plurality of input ports for receiving data units on virtual connections, each of the data units designating a priority;
a plurality of output ports, each output port operatively associated with a plurality of output data stores and an output control; ~~[and]~~
a switch fabric for switching data units from any of the input ports to any of the output ports;
a rate filter capable of filtering at least one data unit,
wherein the output data stores on an output side of the switch fabric are arranged to buffer data units for delivery to their associated output ~~[ports]~~ port, and the output controls are arranged to segregate the data units for storage in the output data stores based on their designated priorities and to monitor the backlog of buffered data units in one or more of said plurality of output data stores for delivery to their associated output ports and, if the backlog reaches a particular level, to enforce a rate limitation against additional data units for delivery to their associated output ports, wherein the additional data units in violation of the rate limitation are filtered by said rate filter so that they are not stored in the output data stores.

10. (Four Times Amended) An ATM switch, comprising:
a plurality of input ports for receiving data units on virtual connections, each of the data units designating a priority;
a plurality of output ports, each output port operatively associated with a plurality of output data stores and an output control; ~~[and]~~
a switch fabric for switching data units from any of the input ports to any of the output ports; and

a rate filter capable of filtering at least one data unit,
wherein the output data stores on an output side of the switch fabric are arranged to buffer data units for delivery to their associated output ~~[ports]~~ port, and the output controls are arranged to segregate the data units for storage in the output data stores based on their designated priorities and to monitor the backlog of buffered data units in one or more of said plurality of output data stores for delivery to their associated output ports and, if the backlog buffered in one or more selected stores reaches a particular level, to enforce a rate limitation against additional data units for delivery to their associated output ports, wherein the additional data units in violation of the rate limitation are filtered by said rate filter so that they are not stored in the output data stores.

23. (Twice Amended) A DIBOC-based ATM switch, comprising:

a plurality of input ports for receiving data units on virtual connections, each input port physically associated with a plurality of data stores and an input control for transmitting "Requests" to release data units;

a plurality of output ports, each output port operatively associated with the plurality of the data stores and physically associated with an output control for monitoring "Requests" to release data units; and

a switch fabric for switching data units for any of the input ports to any of the output ports;

wherein the data stores are arranged to buffer data units for delivery to their associated output ~~[ports]~~ port, and the output controls are arranged to monitor the backlog of buffered data units for delivery to their associated output ports, through information transmitted in "Requests" and, if the backlog reaches a particular level, to enforce a rate limitation against additional data units for

delivery to their associated output ports, wherein the additional data units in violation of the rate limitation are filtered.

33. (Thrice Amended) An ATM switch, comprising:

a plurality of input ports for receiving data units on virtual connections, each of the data units designating a priority;

a plurality of output ports, each output port operatively associated with a plurality of data stores and an output control;
[and]

a switch fabric for switching data units from any of the input ports to any of the output ports; and

a rate filter capable of filtering at least one data unit,

wherein the data stores are arranged to buffer data units for delivery to their associated output ~~[ports]~~ port, and the output controls are arranged to segregate the data units for storage in the ~~[output]~~ data stores based on their designated priorities and to monitor the backlog of buffered data units buffered in two or more of said plurality of data stores for delivery to their associated output ports and, if the backlog reaches a particular level, to enforce a rate limitation against additional data units for delivery to their associated output ports, wherein the additional data units in violation of the rate limitation are filtered by said rate filter so that they are not stored in the data stores.

38. (Amended) The ATM switch according to claim 33, wherein the data ~~[buffers]~~ stores are physically associated with input ports.

39. (Amended) The ATM switch according to claim 33, wherein the data ~~[buffers]~~ stores are physically associated with output ports.

42. (Thrice Amended) An ATM switch, comprising:

a plurality of input ports for receiving data units on virtual connections, each of the data units designating a priority;

a plurality of output ports, each output port operatively associated with a plurality of data stores and an output control;
[and]

a switch fabric for switching data units from any of the input ports to any of the output ports; and

a rate filter capable of filtering at least one data unit,

wherein the data stores are arranged to buffer data units for delivery to their associated output ~~[ports]~~ port, and the output controls are arranged to segregate the data units for storage in the ~~[output]~~ data stores based on their designated priorities and to monitor the backlog of buffered data units buffered in two or more of said plurality of data stores for delivery to their associated output ports and, if the backlog buffered in one or more selected stores reaches a particular level, to enforce a rate limitation against additional data units for delivery to their associated output ports, wherein the additional data units in violation of the rate limitation are filtered by said rate filter so that they are not stored in the data stores.

49. (Amended) The ATM switch according to claim 42, wherein the data ~~[buffers]~~ stores are physically associated with input ports.

50. (Amended) The ATM switch according to claim 42, wherein the data ~~[buffers]~~ stores are physically associated with output ports.